In the Claims:

Please amend the claims indicated below.

Sub B1

1. (Amended) A system comprising a central processing unit (CPU)[, wherein the CPU includes] including power management logic [that that enables] to enable the CPU to operate in a first execution mode whenever the temperature of the CPU exceeds the predetermined threshold and [operates] to operate in a second execution mode whenever the temperature of the CPU is below the predetermined threshold, wherein the CPU executes a first quantity of instructions per cycle in the first execution mode and executes a second quantity of instructions per cycle in the second execution mode.

2. (Unchanged) The system of claim 1 wherein the power management logic comprises:

a thermal sensor;

a digital filter coupled to the thermal sensor; and

an interrupt generating hardware coupled to the digital filter, wherein the interrupt generating hardware generates a first interrupt whenever the temperature of the CPU exceeds the predetermined threshold and generates a second interrupt whenever the temperature of the CPU is below the predetermined threshold.

3. (Unchanged) The system of claim 2 wherein the power management logic further comprises an analog to digital converter coupled between the thermal sensor and the digital filter.

4. (Unchanged) The system of claim 2 further comprising programmable array logic (PAL), wherein the PAL includes an interrupt handler for receiving the first and second interrupts.

5. (Unchanged) The system of claim 4 wherein the power management logic further comprises:

an instruction execution unit coupled to the interrupt handler; and

an artificial activity generator coupled to the interrupt handler.

6. (Amended) The system of claim 5 wherein the instruction execution unit [causes the CPU to operate in a full dispersal] executes six instructions per cycle in the first execution mode whenever the die temperature is below the predetermined threshold temperature and[to operate in a single dispersal mode] executes one instruction per cycle in the second execution whenever the die temperature is above the predetermined threshold temperature.

7. (Unchanged) The system of claim 5 wherein the artificial activity generator causes the CPU artificial activity generator to suspend artificial activity within the CPU whenever the die temperature is above the predetermined threshold temperature.

8. (Amended) A method comprising:

determining whether the temperature of a central processing unit (CPU) exceeds a predetermined threshold;

generating a first interrupt if the temperature of the CPU exceeds the predetermined threshold; and

transitioning from a first execution mode to a second execution mode, wherein the CPU executes a first quantity of instructions per cycle in the first execution mode and executes a second quantity of instructions per cycle in the second execution mode.

9. (Unchanged) The method of claim 8 wherein the process of transitioning from the first execution mode to the second execution mode comprises:

interrupting an artificial activity mode; and

transitioning from a full instruction execution mode to a single instruction execution mode.

10. (Unchanged) The method of claim 9 further comprising:

suspending the execution of code at the CPU after generating the first interrupt; and

resuming the execution of code at the CPU after transitioning to the single instruction execution mode.

11. (Unchanged) The method of claim 10 further comprising:

determining whether the temperature of the CPU exceeds the predetermined threshold after transitioning to the single instruction execution mode; and

terminating the operation of the CPU if the temperature of the CPU exceeds the predetermined threshold after transitioning to the single instruction execution mode.

12. (Unchanged) The method of claim 10 further comprising:

determining whether the temperature of the CPU exceeds the predetermined threshold after transitioning to the single instruction execution mode; and

generating a second interrupt if the CPU does not exceed the predetermined threshold after transitioning to the single instruction execution mode.

13. (Unchanged) The method of claim 12 further comprising transitioning from the second execution mode to the first execution mode.

14. (Unchanged) The method of claim 13 wherein the process of transitioning from the second execution mode to the first execution mode comprises:

resuming the artificial activity mode; and

transitioning from the single instruction execution mode to the full instruction execution mode.

15. (Unchanged) The method of claim 12 wherein the first interrupt is a high temperature interrupt and the second interrupt is a normal temperature interrupt.

16. (Amended) A central processing unit (CPU) comprising:

a thermal sensor; and

[an analog to digital converter coupled to the thermal sensor

a digital filter coupled to the analog to digital converter; and

an interrupt generating hardware coupled to the digital filter, wherein the interrupt generating hardware generates a first interrupt whenever the temperature of the CPU exceeds the predetermined threshold and generates a second interrupt whenever the temperature of the CPU is below the predetermined threshold]

an instruction execution unit to generate a first quantity of instructions per cycle in a first execution mode whenever the thermal sensor measures temperature exceeding a predetermined threshold and to generate a second quantity of instructions per cycle in a

second execution mode whenever the thermal sensor measures temperature below the predetermined threshold.

17. (Amended) The CPU of claim 16 further comprising:

interrupt generating hardware coupled to generate a first interrupt whenever the thermal sensor measures a temperature that exceeds the predetermined threshold and generates a second interrupt whenever the thermal sensor measures a temperature below the predetermined threshold.

[an instruction execution unit; and

an artificial activity generator.]

18. (Amended) The CPU of claim 17 further comprising [wherein the instruction execution unit causes the CPU to operate in a full dispersal mode whenever the die temperature is below the predetermined threshold temperature and to operate in a single dispersal mode whenever the die temperature is above the predetermined threshold temperature] an artificial activity generator.

19. (Amended) The CPU of claim [16] 18 wherein the artificial activity generator causes the artificial activity generator to suspend artificial activity within the CPU whenever the die temperature is above the predetermined threshold temperature.

20. (Amended) Power management logic comprising:

a thermal sensor; and

[an analog to digital converter coupled to the thermal sensor

a digital filter coupled to the analog to digital converter; and

an interrupt generating hardware coupled to the digital filter, wherein the interrupt generating hardware generates a first interrupt whenever the temperature a central processing unit (CPU) exceeds the predetermined threshold and generates a second interrupt whenever the temperature of the CPU is below the predetermined threshold.]

an instruction execution unit to generate a first quantity of instructions per cycle in a first execution mode whenever the thermal sensor measures a temperature exceeding a predetermined threshold and to generate a second quantity of instructions per cycle in a second execution mode whenever the thermal sensor measures temperature below the predetermined threshold.

21. (Amended) The power management logic of claim 20 further comprising:

[an instruction execution unit; and

an artificial activity generator]

interrupt generating hardware to generate a first interrupt whenever the thermal sensor measures a temperature that exceeds the predetermined threshold and generates a second interrupt whenever the thermal sensor measures a temperature below the predetermined threshold..

22. (Amended) The power management logic of claim 20 further comprising [wherein the instruction execution unit causes the CPU to operate in a full dispersal mode whenever the die temperature is below the predetermined threshold temperature and to operate in a single dispersal mode whenever the die temperature is above the predetermined threshold temperature] an artificial activity generator.

23. (Amended) The power management logic of claim [20] 22 wherein the artificial activity generator causes the artificial activity generator to suspend artificial activity

within the CPU whenever the die temperature is above the predetermined threshold temperature.

Please add the following new claim.

24. (New) The power management logic of claim 21 further comprising:

an analog to digital converter coupled to the thermal sensor; and

a digital filter coupled to the analog to digital converter and the interrupt generating hardware.